

Date: Monday, 11/08/2008 2:45:22 PM  
 User: Linda Lacelle

## Process Sheet

Customer	: CU-DAR001 Dart Helicopters Services		Drawing Name	: 350 SKIDTUBE EXTRUSION (BENT)			
Job Number	: 41122						
Estimate Number	: 10997						
P.O. Number	:			Part Number	: D26003BENT		
This Issue	: 11/08/2008	S.O. No. :		Drawing Number	: D2600 D1/D2750 E		
Prsht Rev.	: NC			Project Number	: N/A		
First Issue	: / /		Type	: MACHINED PARTS			
Previous Run	: 39714			Drawing Revision	: D1/E		
Written By	:			Material	:		
Checked & Approved By	: JUD 08.8.11			Due Date	: 15/08/2008		
Comment	: Est. B02.11.28 Reformat KJ			Qty:	20	Um: Each	

## Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :	
1.0	D26003120	Extrusion Round 3" 350	
		Comment: Qty.: 1.0000 Each(s)/Unit Total : 20.0000 Each(s)	
		Extrusion Bent	
		Pick:	
	Qty	Part Number	Description
	1	D2600-3	Extrusion
			Batch <u>37756</u>
			2T 08-08-15 (X20)
2.0	BENDING	BENDING MACHINE - SKIDTUBES	
		Comment: BENDING MACHINE	(Ph)
		Deburr one end of extrusion	
		Drill #30 pilot holes using DT8689	
		Open holes to 5/16" and deburr	
		Bend using CNC bending machine as per program 2750.C and Folio FT003.	
		Use 5/16 locator pin on buggy "A".	
		Check fit to Jig DT8150	
			2T 08-08-15
3.0	QC5	INSPECT WORK TO CURRENT STEP	
		Comment: INSPECT WORK TO CURRENT STEP	
		Inspect work to Step 6 Ensure fit to Jig DT8150	
			8080813 (X18)
4.0	PACKAGING 1	PACKAGING RESOURCE #1	
		Comment: PACKAGING RESOURCE #1	
		Identify and Stock	
		Location: <u>Skid tube cell</u>	
			2T 08-08-15

W/O:		WORK ORDER CHANGES							
DATE	STEP	PROCEDURE CHANGE			By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D2600-3B PAR #: \_\_\_\_\_ Fault Category: Prod / x-tube NCR:  Yes No DQA:  Date: 08/08/15  
 QA: N/C Closed:  Date: 08/08/15

NCR: <u>41122</u>		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
8/8/13	4 20	two tubes scrap. + Bend is too close to the soft end of tube. <u>2-tube didn't bend</u>	<u>Initial</u> <u>08/08/13</u>	Scrap and Destroy and no Replace Qty (x2) B# 37756.	RT 08/08/13	<u>Initial</u> <u>08/08/13</u>	<u>Initial</u> <u>08/08/13</u>	<u>Initial</u> <u>08/08/13</u>
		1-tube was <u>crushed</u> . crushed R.C both are a machine malfunction	<u>Initial</u> <u>08/08/13</u>	call / inform training of problems with bending	<u>Initial</u> <u>08/08/13</u>	<u>Initial</u> <u>08/08/13</u>	<u>Initial</u> <u>08/08/13</u>	<u>Initial</u> <u>08/08/13</u>

NOTE: Date & initial all entries

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Drawing Name: 350 SKIDTUBE EXTRUSION (BENT)

Job Number: 41122

Part Number: D26003BENT

Job Number:



Seq. #: Machine Or Operation:

Description :

5.0 QC21

FINAL INSPECTION/W/O RELEASE



18

Comment: FINAL INSPECTION/W/O RELEASE

Do 08/15

Job Completion



MF 08-08-14

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
 QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA
CHECKED	APPROVED	DRAWING NO. D2600 REV. D SHEET 1 OF 5
DATE		TITLE EXTRUSION SCALE 1:1
98.08.20		
A	97.01.21	NEW ISSUE
B	97.09.09	CHANGE MATERIAL SPEC.
C	98.04.16	ADD D2600-3, UPDATE D2600-1 WIDTH, ADD DIE NO.
D	98.08.20	INCREASE MIN. UTS TO 40 KSI
DI	01.04.17	ADD PART NUMBERS & DIE NUMBERS <i>#GP</i>

RELEASED  
18.08.25 DS

#### GENERAL NOTES

1. MATERIAL: 6061-T6 (QQ-A-200/8)

MINIMUM YIELD TENSILE STRENGTH = 35 ksi  
MINIMUM ULTIMATE TENSILE STRENGTH = 40 ksi  
MINIMUM ELONGATION = 8 %

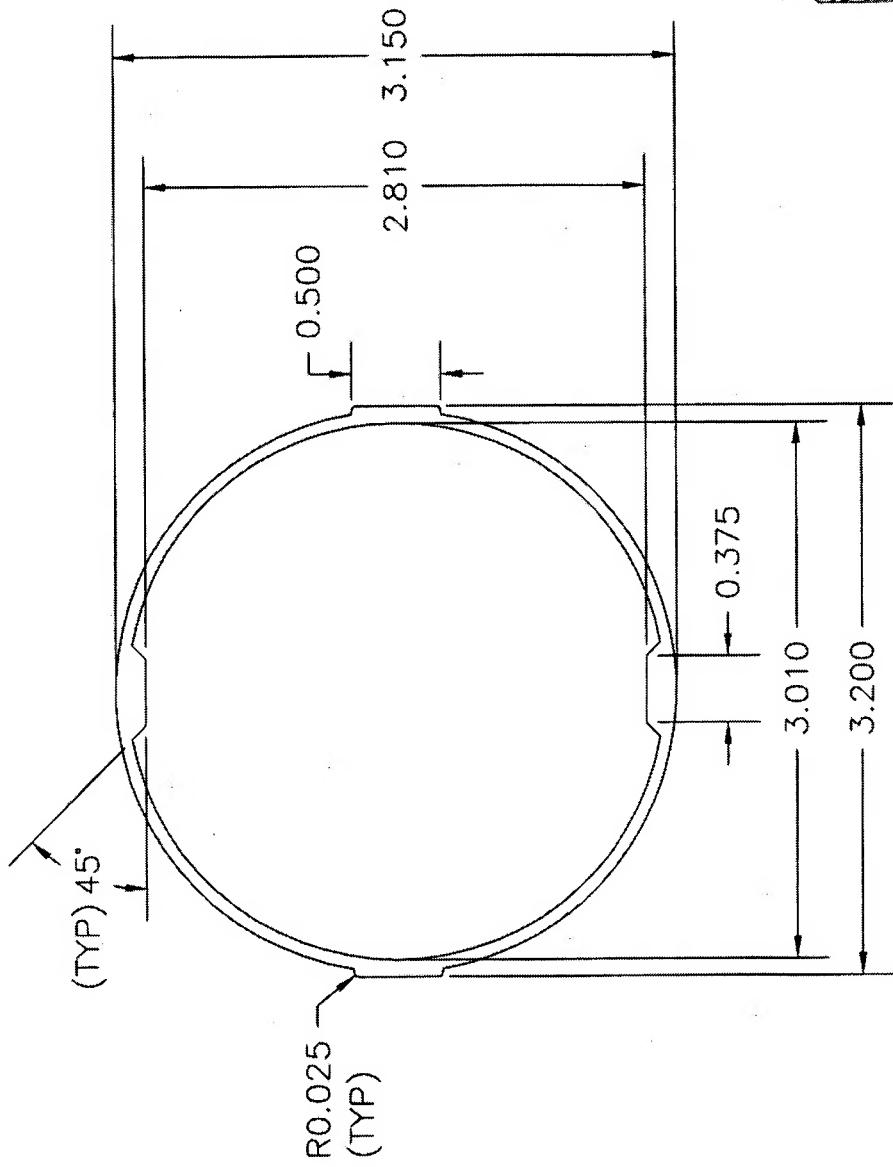
A SAMPLE FROM EACH BATCH WILL BE PULL TESTED  
TO ASTM STANDARD B221 BY AN APPROVED TESTING  
FACILITY TO ENSURE THAT THE BATCH MEETS THE  
ABOVE MINIMUM MECHANICAL PROPERTIES.

2. BREAK ALL SHARP CORNERS 0.010 MAX.
3. NO TOOLING MARKS.
4. TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE  
NOTED.
5. ALL DIMENSIONS ARE IN INCHES.

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DATE 98.08.20		REV. D SHEET 2 OF 5 TITLE EXTRUSION SCALE 1:1



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98.8.25 DS

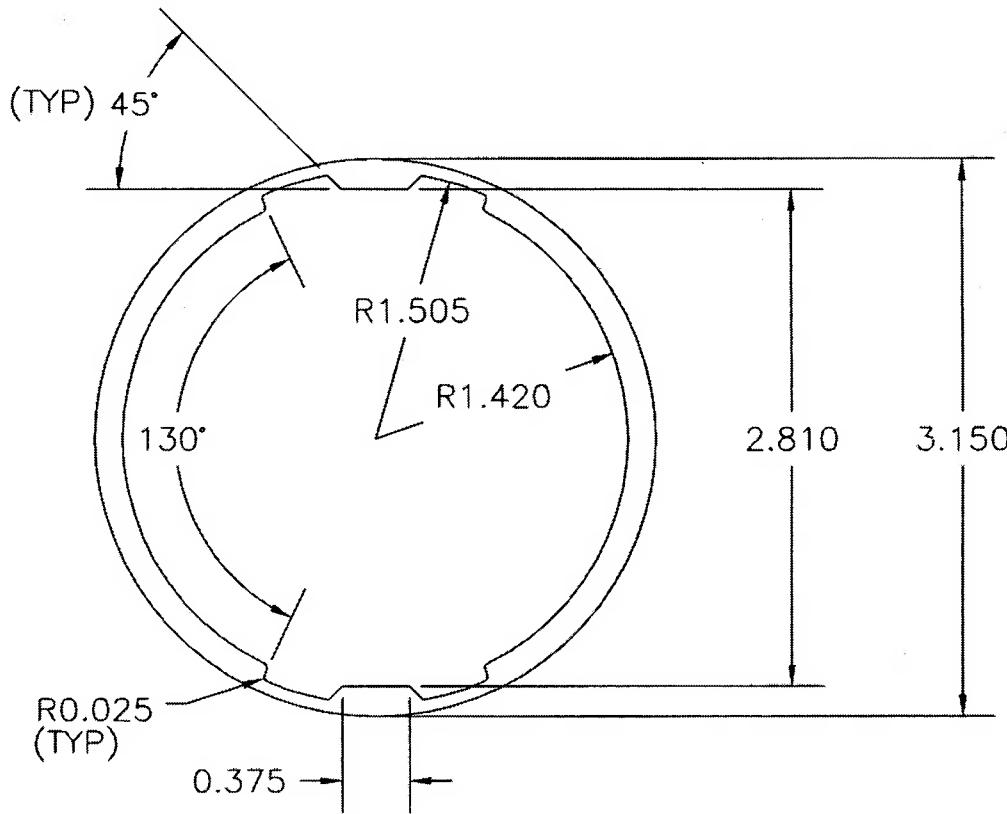
D2600-1

MANUFACTURED WITH CARADON INDALEX DIE # MH-18870  
OR BON L DIE # 897121 (PREFERRED CHOICE)  
PART NUMBER IS D2600-1-XXX WHERE XXX IS CUT LENGTH IN INCHES (EG. D2600-1-160 IS 160" Long)

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DATE	TITLE	SCALE 1:1

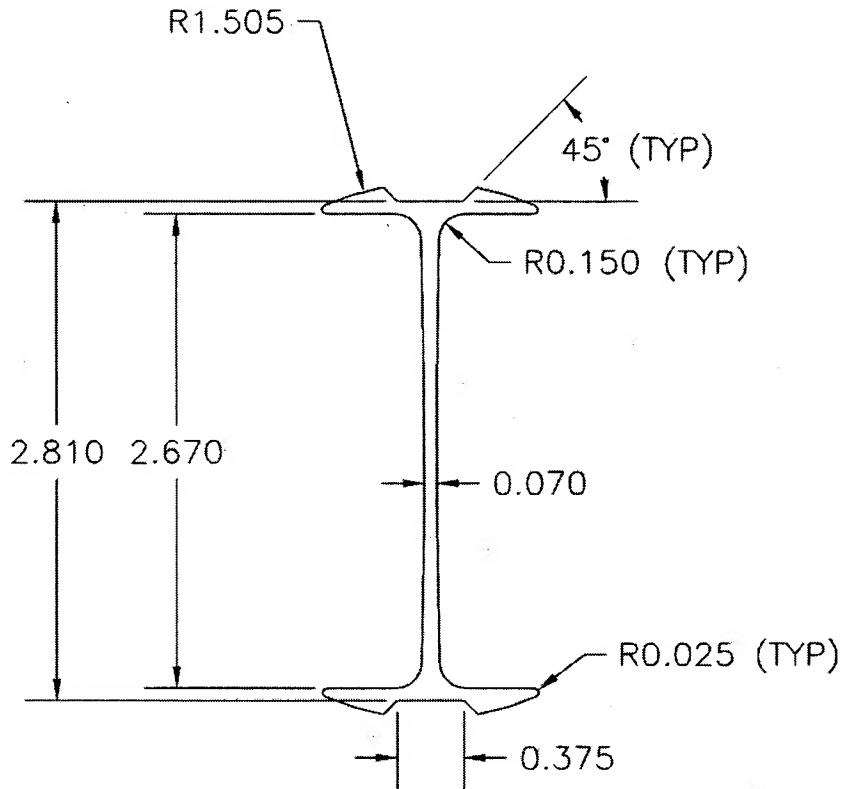
D2600-3

MANUFACTURED WITH CARADON INDALEX DIE # MH-18859  
OR BON L DIE # 897122 (PREFERRED CHOICE)

PART NUMBER IS D2600-3-XXX WHERE XXX IS CUT LENGTH IN INCHES (EG. D2600-3-120 IS 120" LONG)

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98.8.15 DS

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D2600-5

MANUFACTURED WITH CARADON INDALEX DIE # MS-18871

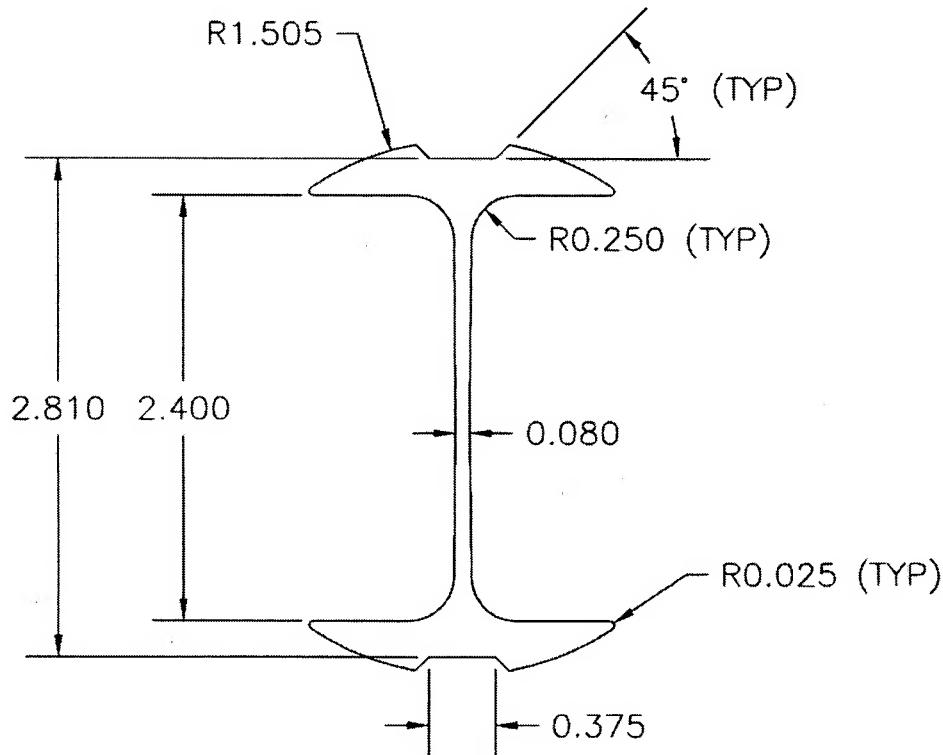
PART NUMBER IS D2600-5-XXX WHERE XXX IS CUT LENGTH IN INCHES  
(EG. D2600-5-108 IS 108" LONG)



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DATE 98.08.20		DRAWING NO. D2600
		SHEET 4 OF 5
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		SCALE 1:1
		EXTRUSION



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<i>Ke</i>	<i>AS</i>	D2600
DATE	TITLE	SCALE
98.08.20	EXTRUSION	1:1

D2600-7

MANUFACTURED WITH CARADON INDALEX DIE # MS-18872  
 PART NUMBER IS D2600-7-XXX WHERE XXX IS CUT LENGTH IN INCHES  
 (EG. D2600-7-125 IS 125" LONG)



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CHECKED <i>PH</i>	APPROVED <i>TH</i>	DRAWING NO. <b>D2750</b>	REV. E SHEET 1 OF 5
DATE <b>07.05.17</b>	TITLE <b>350 SKIDTUBE ASSEMBLY</b>		SCALE NTS
REV	DATE	DESCRIPTION	
A	98.04.16	NEW ISSUE	
B	98.09.01	CHANGE MS24694-S293 TO AN8-16A	
C	98.11.18	ADD D2750-3 / D2750-4; INCORPORATE D2738 AND D2740	
D	06.01.05	ADD HOLES AND SPACERS FOR APICAL FLOATS INCORPORATE DEO 9133 / 9157	
E	07.05.17	CHANGE TO STAINLESS STEEL WEARPLATES; ADD RUBBER GASKETS; CHANGE INSERTS; ADD D3631-1; REMOVE QTY(38) NAS1515H3L; REMOVE QTY(10) NAS1515H8L; REMOVE D2741, QTY(2) AN960C816; REMOVE QTY(2) MS21083C8	

**RELEASED**07.08.02 *TH*

Qty -041	Qty -042	Qty -043	Qty -044	Part Number	Description
X				D2750-041	SKIDTUBE ASSEMBLY, LH
	X			D2750-042	SKIDTUBE ASSEMBLY, RH
		X		D2750-043	SKIDTUBE ASSEMBLY, LH
			X	D2750-044	SKIDTUBE ASSEMBLY, RH
1	1	1	1	D2739	WEB
8	8	8	8	D2743	SPACER
1	1	1	1	D2744	CAP
8	8	8	8	D2745	BUSHING
1				D2750-1	SKIDTUBE WELDMENT, LH
	1			D2750-2	SKIDTUBE WELDMENT, RH
		1		D2750-3	SKIDTUBE WELDMENT, LH
			1	D2750-4	SKIDTUBE WELDMENT, RH
1		1		D3488-041	BLADE FITTING, LH
	1		1	D3488-042	BLADE FITTING, RH
4	4	4	4	D3490-1	SPACER
4	4			D3490-3	SPACER
		4	4	D3490-5	SPACER
8	8	8	8	D3492-041	PLUG ASSEMBLY
8	8			D3492-043	PLUG ASSEMBLY
		8	8	D3492-045	PLUG ASSEMBLY
1	1	1	1	D3535-13	WEARSHOE
1	1	1	1	D3535-25	WEARSHOE
1	1	1	1	D3535-35	WEARSHOE
1	1	1	1	D3536-13	GASKET
1	1	1	1	D3536-25	GASKET
1	1	1	1	D3536-35	GASKET
5	5	5	5	D3537-1	WEARPAD
8	8	8	8	D3631-1	WASHER
<i>E</i>	<i>E</i>	<i>E</i>	<i>E</i>	<i>E</i>	<i>E</i>
42	42	42	42	ALS4-1032-225	INSERT (OR ALS7-1032-225, AKS4-1032-225, AELS-1032-225)
38	38	38	38	AN3C5A	BOLT
4	4	4	4	AN3C6A	BOLT
4	4	4	4	AN3C7A	BOLT
4	4	4	4	AN6C44A	BOLT
1	1	1	1	AN8C35A	BOLT
46	46	46	46	AN960C10L	WASHER
2	2	2	2	AN960C816L	WASHER
4	4	4	4	MS21043-6	NUT
1	1	1	1	MS21083C8	NUT
4	4	4	4	NAS1515H3L	WASHER
2	2	2	2	NAS1515H8L	WASHER

*UNDER REVIEW*  
*08.06.27 RT*  
*UPDATE PER*  
*0519419*

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DATE <b>07.05.17</b>		TITLE <b>350 SKIDTUBE ASSEMBLY</b>	SCALE	NTS

GENERAL NOTES:**RELEASED**  
07-08-02 *CH*

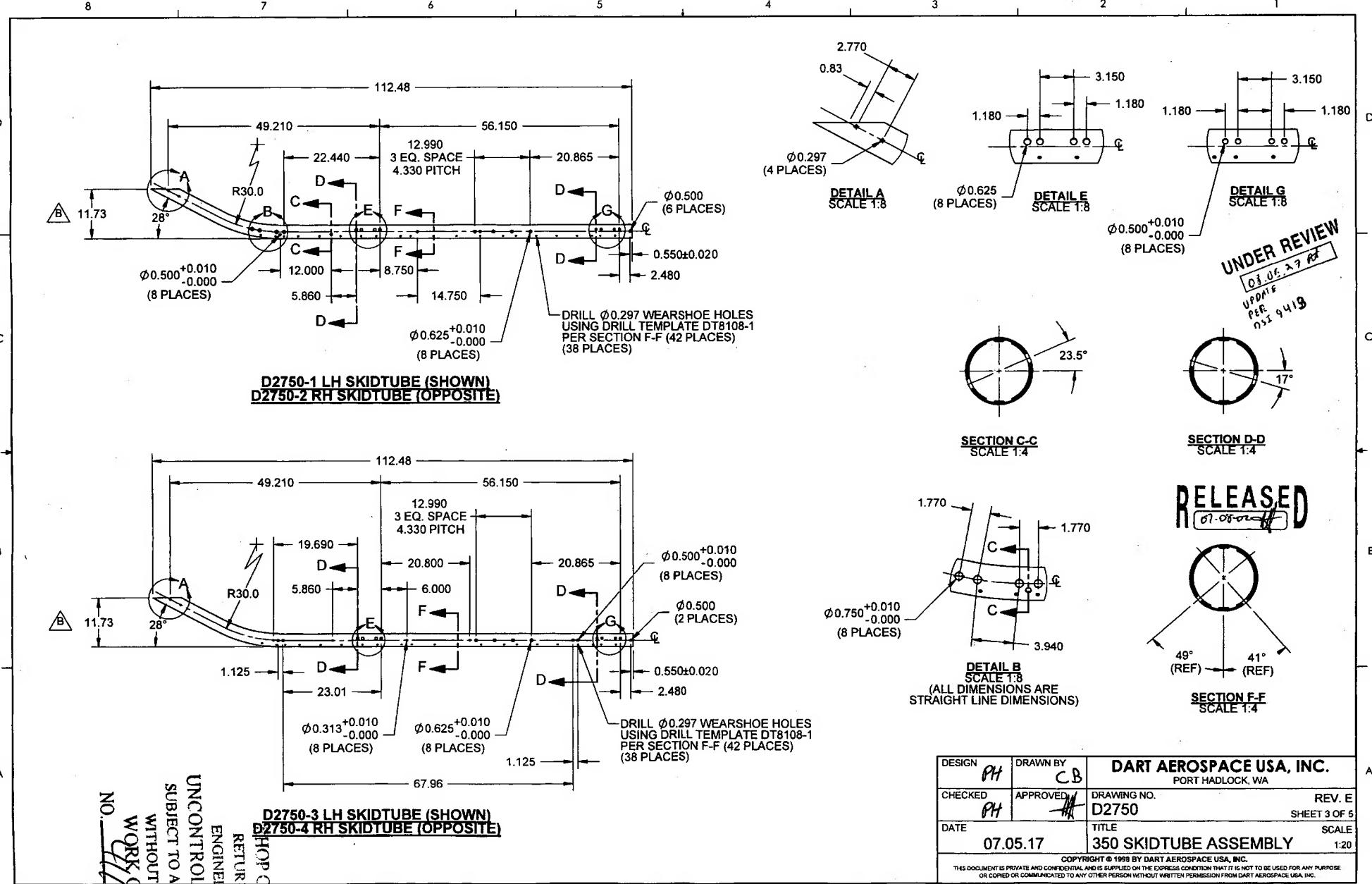
1. ALL DIMENSIONS ARE IN INCHES.
2. TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
3. MAKE FROM D2600-3 EXTRUSION (INITIAL LENGTH = 120.0).
4. DAMAGE TOLERANCE ON BENDING:  
THERE SHOULD BE NO VISIBLE WRINKLES IN THE BEND FROM THE GROUND TO A HEIGHT OF 12 INCHES ABOVE THE GROUND. NO GOUGING IS ACCEPTABLE IN THE FLAT PORTION OF THE TUBE. GOUGES UP TO 0.020 ARE ACCEPTABLE IN THE BENT PORTION OF THE TUBE. TUBE O.D. SHOULD BE  $3.150 \pm 0.010$  IN THE FLAT PORTION OF THE TUBE. TUBE O.D. SHOULD BE  $3.15 \pm 0.030$  IN THE BENT PORTION OF THE TUBE.
5. ALL HOLES DRILLED ON CENTERLINES EXCEPT THOSE NOTED BY SECTIONS C-C, D-D AND F-F.
6. WELDING TO BE DONE PER DART QSI 004.
7. FINAL CONFIGURATION SHOULD HAVE THE FOLLOWING MINIMUM MECHANICAL PROPERTIES:  
MINIMUM YIELD TENSILE STRENGTH = 35 ksi  
MINIMUM ULTIMATE TENSILE STRENGTH = 38 ksi
8. FINISH:  
ACID ETCH, ALODINE ASSEMBLY PER DART QSI 005 4.1 PRIOR TO INSTALLING D2739 WEB.  
POWDER COAT WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3  
BLACK ANTI-SKID PAINT AS INDICATED TO 1.0 ABOVE SKIDTUBE CENTER-LINE PER DART 005 4.4 (OPTIONAL).
9. INSTALL ALS4-1032-225 INSERTS AFTER FINISH AS INDICATED IN D2750-1/2/3/4 WELDING DETAIL ON PAGE 4 AND 5. DRILL 'F' SIZE HOLES ( $\varnothing 0.297$ ) FOR WEARSHOE INSERTS.
10. D3488-041 (OR D3488-042) BLADE FITTING AND AN3C5A/AN3C7A WEARSHOE BOLTS WITHOUT NOTICE TO BE INSTALLED USING SIKAFLEX-241 (OR EQUIVALENT) SEALANT.
11. SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.

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03.06.27 AF  
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PER  
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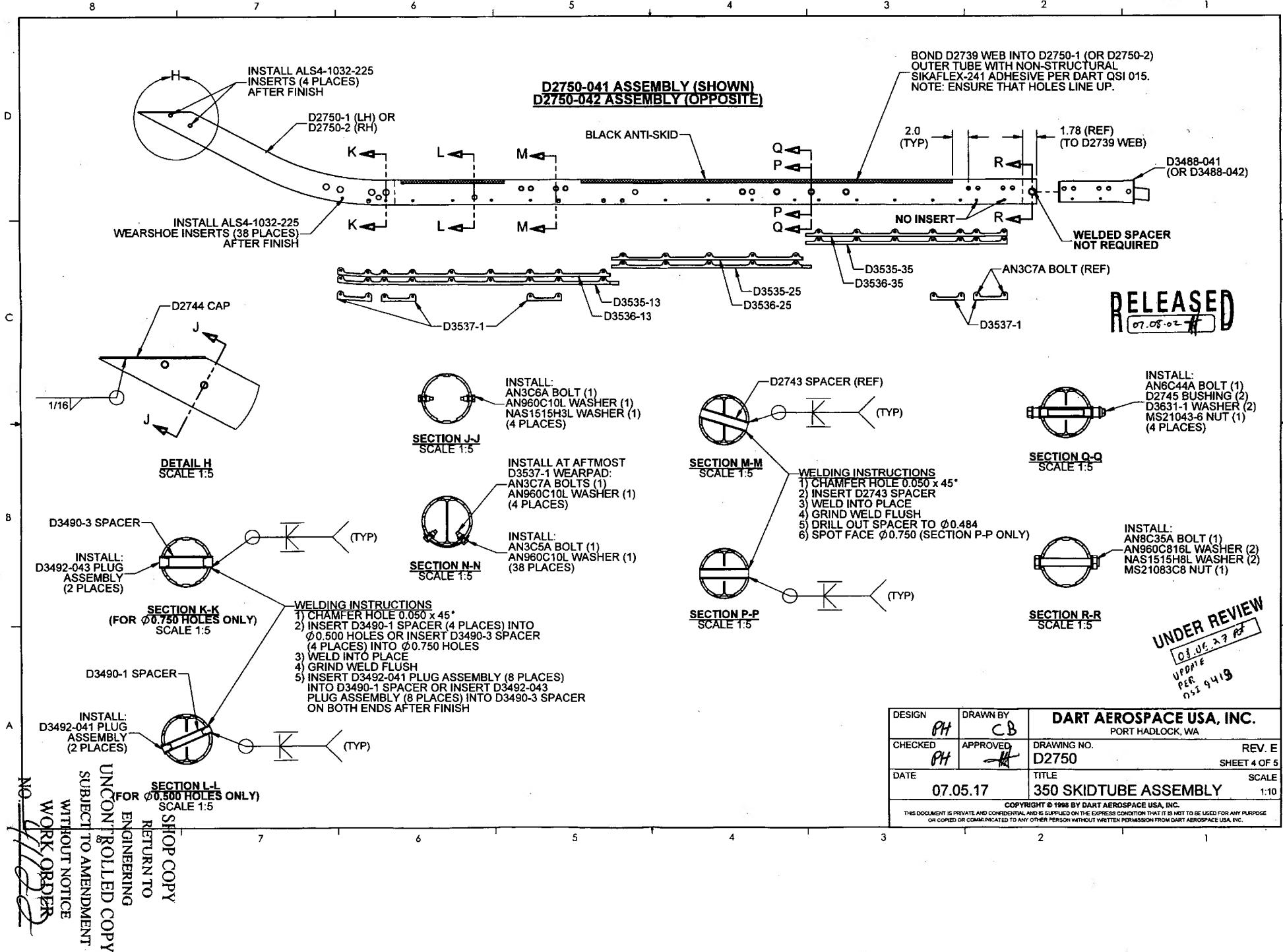


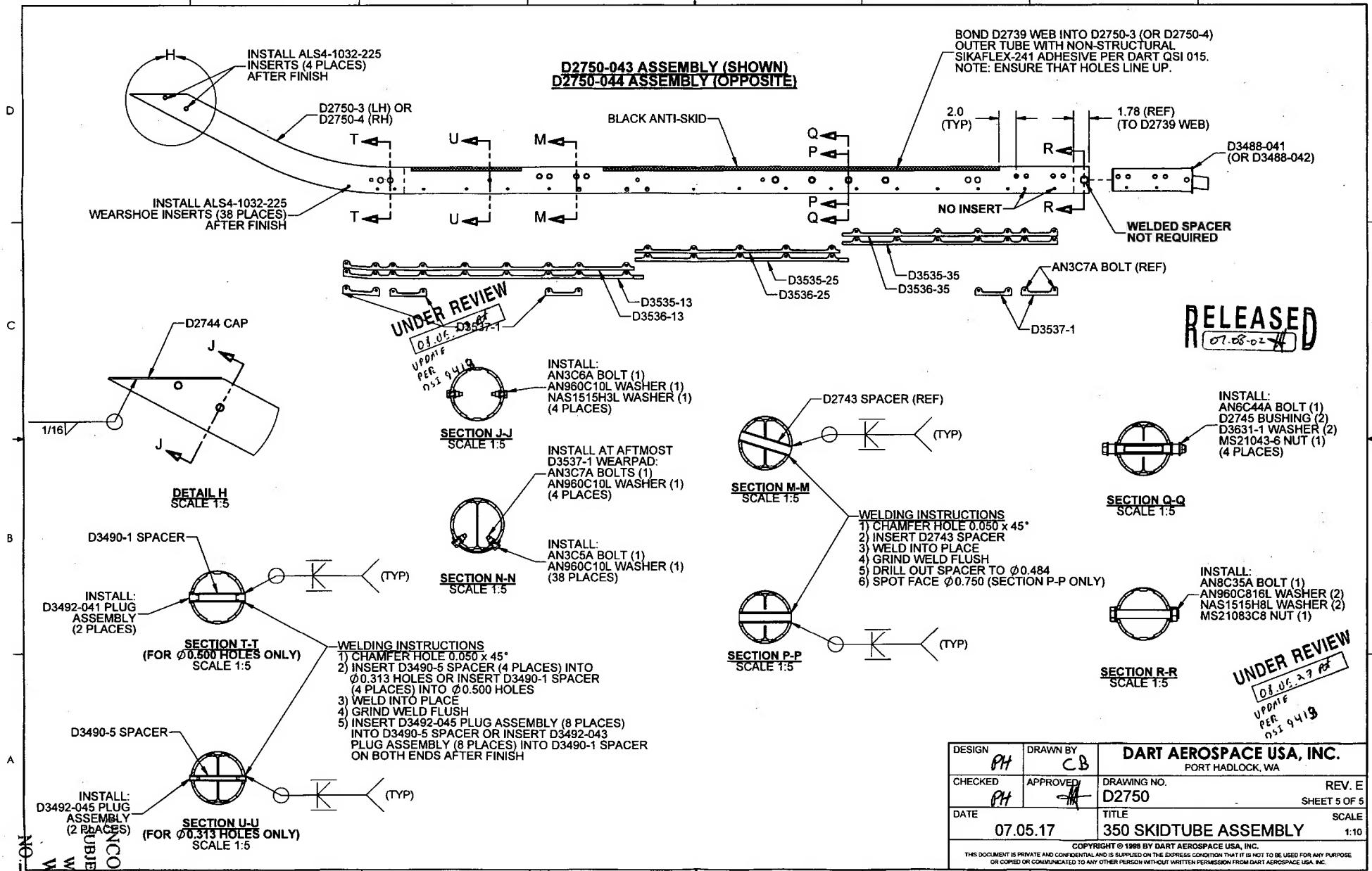
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DATE <b>07.05.17</b>		TITLE <b>350 SKIDTUBE ASSEMBLY</b>	SCALE	1:20
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DATE <b>07.05.17</b>	TITLE <b>350 SKIDTUBE ASSEMBLY</b>		SCALE 1:10	
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